

What is Claimed is:

1. A dry solid particle mixture for equalizing radial and lateral force variations at the
tire/road footprint of a pneumatic tire, wherein
- (a) the particles forming said particle mixture are freely flowable and non-tacky at
5 elevated temperatures;
- (b) said particle mixture is essentially devoid of liquid material;
- (c) said particle mixture comprises a plurality of sets of particles, wherein each set
consists essentially of particles of a predetermined size or size range; and
- (d) said particle mixture exhibits a multimodal particle size distribution.
- 10 2. A particle mixture according to claim 1, wherein said particle mixture comprises
spheres of a first diameter and spheres of a second diameter.
3. A particle mixture according to claim 1, wherein said particle mixture comprises a
first set of particles having a first size range and a second set of particles having a second
size range, the particle size distribution of said particle mixture being characterized by at
15 least two peaks.
4. A particle mixture according to claim 1, wherein said particle mixture comprises a
first set of particles having a first size range, a second set of particles having a second size
range, a third set of particles having a third size range, wherein the particle sizes ranges do
not overlap.
- 20 5. A particle mixture according to claim 1, wherein said particles forming said
particle mixture have a specific gravity greater than 1.
6. A particle mixture according to claim 1, wherein said particles forming said
particle mixture have sufficient hardness to prevent them from degrading while tumbling
in said tire.
- 25 7. The particle mixture according to claim 1, wherein said mixture comprises
polymeric resin particles.
8. The particle mixture according to claim 7, wherein said particle mixture includes
substantially 70% by weight of said polymeric resin and 28% by weight of a cellulose
material.
- 30 9. The particle mixture according to claim 7, wherein said polymeric resin is a
thermoset material.
10. The particle mixture according to claim 7, wherein said polymeric resin is a

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thermoplastic material.

11. The particle mixture according to claim 1, wherein one set of particles is made of fiberglass.

12. A particle mixture according to claim 11, wherein said fiberglass particles are in a
5 size range substantially between 130-200 U.S. screen size.

13. A particle mixture according to claim 1, further comprising a lubricant material.

14. A particle mixture according to claim 13, wherein said lubricant particles are in a size range substantially between 200-325 U.S. screen size.

15. A particle mixture according to claim 13, wherein said particle mixture comprises
10 15 -30 % lubricant material by weight.

16. A particle mixture according to claim 13, wherein said lubricant is talc.

17. A particle mixture according to claim 13, wherein said lubricant is corn starch.

18. A particle mixture according to claim 13, wherein said lubricant is an anti-agglomeration agent.

15 19. A particle mixture according to claim 1, wherein the mixture exhibits a multimodal particle size characteristic when plotted on a particle weight percentage versus particle size diameter basis.

20. A particle mixture according to claim 1, wherein said particles are in a size range substantially between 60-270 U.S. screen size.

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